

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2
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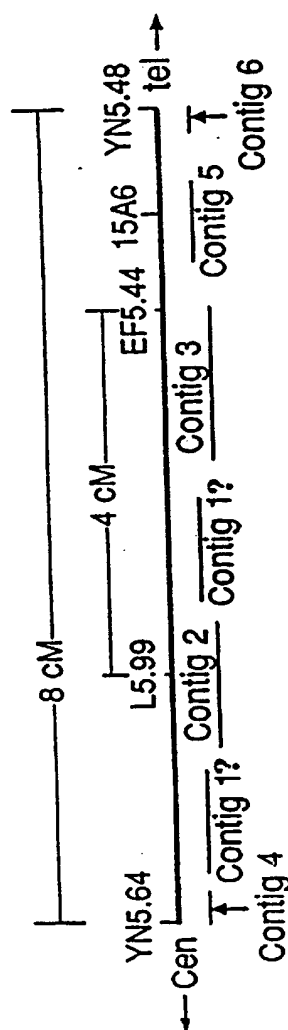


FIG. 1A

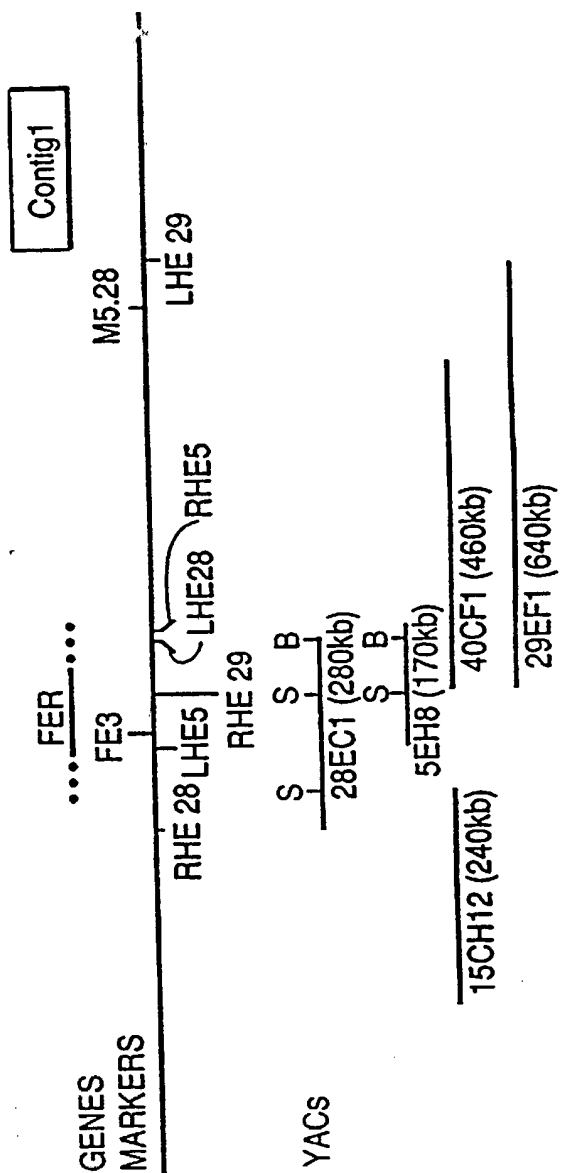
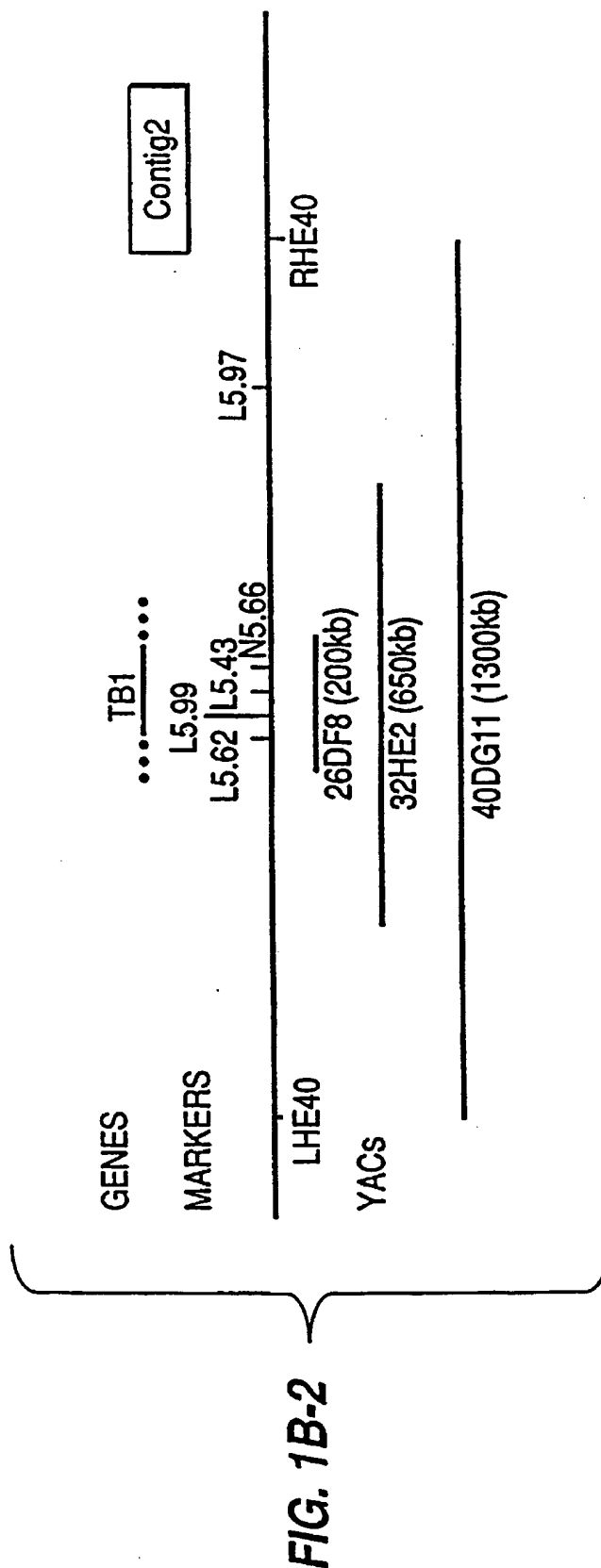


FIG. 1B-1

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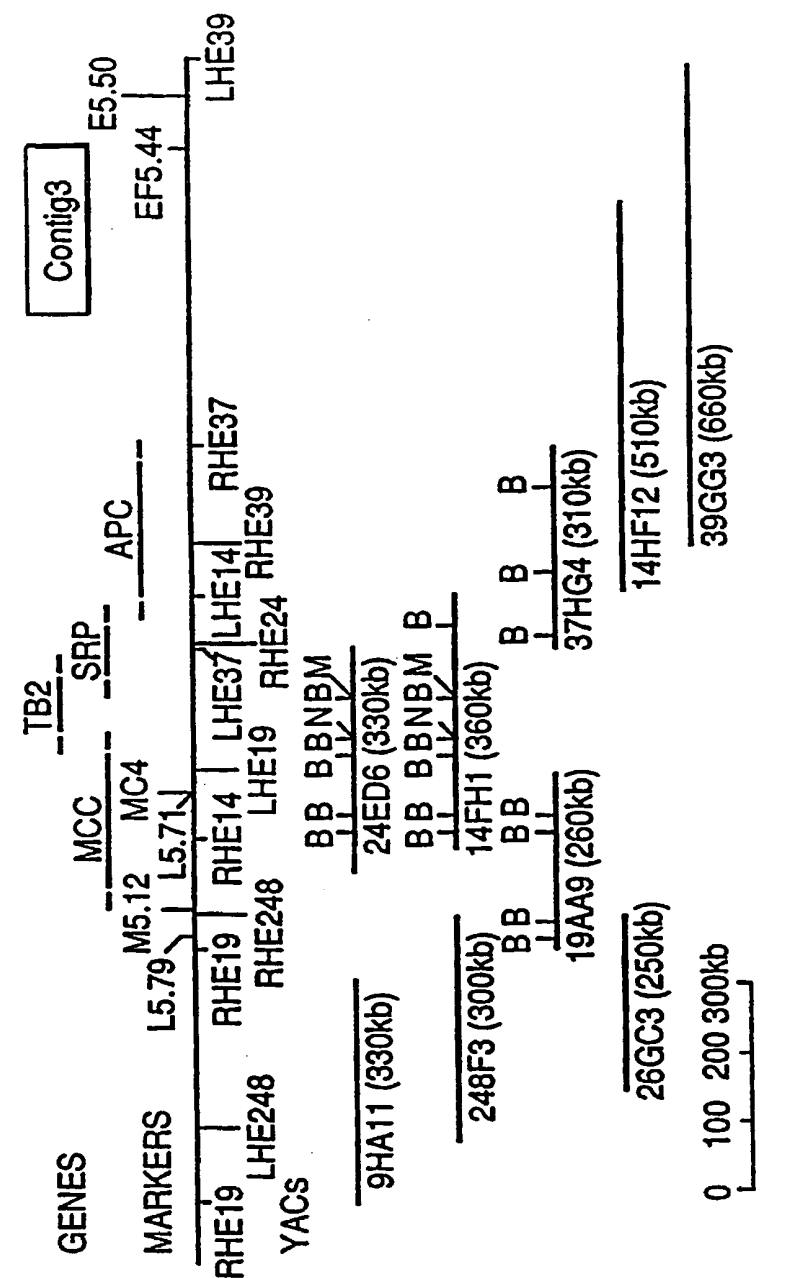


FIG. 1B-3

FIG. 2A

TB1 AMINO ACID SEQUENCE

VAPVVVGSGR	APRHPAPAAM	HPRRPOGFDG	LGYRGGARDE	QGFGGAFPAR	SFSTGSDLGH	60
WVTTPPDIPG	SRNLHWGEKS	PPYGVPTTST	PYEGPTEEPF	SSGGGGSVQG	QSSEQLNRFA	120
GFGIGLASLF	TENVLAHPCI	VLRROCQVNY	HAQHYHLTPF	TVINIMYSFN	KIQGPRALWK	180
GMGSTFIVQG	VTLGAEGEIS	EFTPLPREVL	HKWSPKQIGE	HLLKSLTYV	VAMPFYSASL	240
IETVQSEIIR	DNTGILECVK	EGIGRVIGMG	VPHSKRLPL	LSLIFPTVLH	GVLHYIISV	300
IQKFVLLILK	RKTYNSHLAE	STSPVQSMLO	AYFPELIANF	AASLCSDVIL	<u>YPLETVLHRL</u>	360
<u>HIOGIRTIID</u>	<u>NTOLGYEVLP</u>	<u>INTQYEGMRD</u>	<u>CINTIROEEG</u>	<u>VFGFYKGFGA</u>	<u>VIIQYTLHAA</u>	420
VLOITKIIYS	TLLO					434

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FIG. 2B**TB2 AMINO ACID SEQUENCE**

ELRRFDRFLH	EKNCHTDLLA	KLEAKTGVNR	SFIALGVIGL	VALYLVFGYG	ASLLCNLIGF	60
GYPAYISIKA	IESPNKEDDT	QWLTYNVVYG	VFSIAEFFSD	IFLSWFPFYY	ILKCGFLLWC	120
MAPSPNGAE	LLYKRIIRPF	FLKHESQMD	S	VVKDLKDKAK	ETADAITKEA	180
EKKST						185

FIG. 3A

Met	Ala	Ala	Ala	Ser	Tyr	Asp	Gln	Leu	Leu	Lys	Gln	Val	Glu	Ala	Leu
1				5					10					15	
Lys	Met	Glu	Asn	Ser	Asn	Leu	Arg	Gln	Glu	Leu	Glu	Asp	Asn	Ser	Asn
			20					25					30		
His	Leu	Thr	Lys	Leu	Glu	Thr	Glu	Ala	Ser	Asn	Met	Lys	Glu	Val	Leu
		35					40					45			
Lys	Gln	Leu	Gln	Gly	Ser	Ile	Glu	Asp	Glu	Ala	Met	Ala	Ser	Ser	Gly
		50				55					60				
Gln	Ile	Asp	Leu	Leu	Glu	Arg	Leu	Lys	Glu	Leu	Asn	Leu	Asp	Ser	Ser
65					70				75					80	
Asn	Phe	Pro	Gly	Val	Lys	Leu	Arg	Ser	Lys	Met	Ser	Leu	Arg	Ser	Tyr
				85					90					95	
Gly	Ser	Arg	Glu	Gly	Ser	Val	Ser	Ser	Arg	Ser	Gly	Glu	Cys	Ser	Pro
			100					105					110		

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FIG. 3B

Val	Pro	Met	Gly	Ser	Phe	Pro	Arg	Arg	Gly	Phe	Val	Asn	Gly	Ser	Arg
			115				120					125			
Glu	Ser	Thr	Gly	Tyr	Leu	Glu	Glu	Leu	Glu	Lys	Glu	Arg	Ser	Leu	Leu
			130				135				140				
Leu	Ala	Asp	Leu	Asp	Lys	Glu	Glu	Lys	Glu	Lys	Asp	Trp	Tyr	Tyr	Ala
			145				150				155				160
Gln	Leu	Gln	Asn	Leu	Thr	Lys	Arg	Ile	Asp	Ser	Leu	Pro	Leu	Thr	Glu
									165		170			175	
Asn	Phe	Ser	Leu	Gln	Thr	Thr	Asp	Leu	Thr	Arg	Arg	Gln	Leu	Glu	Tyr
									180		185			190	
Ala	Arg	Gln	Ile	Arg	Val	Ala	Met	Glu	Glu	Gln	Leu	Gly	Thr	Cys	Gln
									195		200			205	
Asp	Met	Glu	Lys	Arg	Ala	Gln	Arg	Arg	Ile	Ala	Arg	Ile	Gln	Gln	Ile
									210		215				

FIG. 3C

Glu Lys Asp	Ile Leu Arg	Ile Arg Gln	Leu Leu Gln	Ser Gln Ala	Thr
225	230		235		240
Glu Ala Glu Arg	Ser Ser Gln	Asn Lys His	Glu Thr Gly	Ser His Asp	
	245		250		255
Ala Glu Arg	Gln Asn Glu	Gly Val Gly	Glu Ile Asn	Met Ala	
	260		265		270
Thr Ser Gly	Asn Gly Gln	Ser Thr Thr	Arg Met Asp	His Glu Thr	
	275		280		285
Ala Ser Val	Leu Ser Ser	Ser Thr His	Ser Ala Pro	Arg Arg Leu	
	290		295		300
Thr Ser His	Leu Gly Thr	Lys Val Glu	Met Val Tyr	Ser Leu Leu	Ser
	305		310		315
Met Leu Gly	Thr His Asp	Lys Asp Asp	Met Ser Arg	Thr Leu Leu	Ala
			320		325
					330
					335

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FIG. 3D

Met Ser Ser Ser Gln Asp Ser Cys Ile Ser Met Arg Gln Ser Gly Cys	340	345	350
Leu Pro Leu Leu Ile Gln Leu Leu His Gly Asn Asp Lys Asp Ser Val	355	360	365
Leu Leu Gly Asn Ser Arg Gly Ser Lys Glu Ala Arg Ala Arg Ala Ser	370	375	380
Ala Ala Leu His Asn Ile Ile His Ser Gln Pro Asp Lys Arg Gly	385	390	395
Arg Arg Glu Ile Arg Val Leu His Leu Leu Glu Gln Ile Arg Ala Tyr	400	405	415
Cys Glu Thr Cys Trp Glu Trp Gln Glu Ala His Glu Pro Gly Met Asp	420	425	430
Gln Asp Lys Asn Pro Met Pro Ala Pro Val Glu His Gln Ile Cys Pro	435	440	445

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FIG. 3E

Ala Val Cys Val Leu Met Lys Leu Ser Phe Asp Glu Glu His Arg His	450 455 460
Ala Met Asn Glu Leu Gly Gly Leu Gln Ala Ile Ala Glu Leu Leu Gln	465 470 475 480
Val Asp Cys Glu Met Tyr Gly Leu Thr Asn Asp His Tyr Ser Ile Thr	485 490 495
Leu Arg Arg Tyr Ala Gly Met Ala Leu Thr Asn Leu Thr Phe Gly Asp	500 505 510
Val Ala Asn Lys Ala Thr Leu Cys Ser Met Lys Gly Cys Met Arg Ala	515 520 525
Leu Val Ala Gln Leu Lys Ser Glu Ser Glu Asp Leu Gln Val Ile	530 535 540
Ala Ser Val Leu Arg Asn Leu Ser Trp Arg Ala Asp Val Asn Ser Lys	545 550 555 560

FIG. 3F

Lys Thr Leu Arg Glu Val Gly Ser Val Lys Ala Leu Met Glu Cys Ala	565	570	575
Leu Glu Val Lys Lys Glu Ser Thr Leu Lys Ser Val Leu Ser Ala Leu	580	585	590
Trp Asn Leu Ser Ala His Cys Thr Glu Asn Lys Ala Asp Ile Cys Ala	595	600	605
Val Asp Gly Ala Leu Ala Phe Leu Val Gly Thr Leu Thr Tyr Arg Ser	610	615	620
Gln Thr Asn Thr Leu Ala Ile Ile Glu Ser Gly Gly Ile Leu Arg	625	630	640
Asn Val Ser Ser Leu Ile Ala Thr Asn Glu Asp His Arg Gln Ile Leu	645	650	655
Arg Glu Asn Asn Cys Leu Gln Thr Leu Leu Gln His Leu Lys Ser His	660	665	670

FIG. 3G

Ser	Leu	Thr	Ile	Val	Ser	Asn	Ala	Cys	Gly	Thr	Leu	Trp	Asn	Leu	Ser
		675					680					685			
Ala	Arg	Asn	Pro	Lys	Asp	Gln	Glu	Ala	Leu	Trp	Asp	Met	Gly	Ala	Val
	690					695					700				
Ser	Met	Leu	Lys	Asn	Leu	Ile	His	Ser	Lys	His	Lys	Met	Ile	Ala	Met
	705				710					715					720
Gly	Ser	Ala	Ala	Ala	Leu	Arg	Asn	Leu	Met	Ala	Asn	Arg	Pro	Ala	Lys
				725					730					735	
Tyr	Lys	Asp	Ala	Asn	Ile	Met	Ser	Pro	Gly	Ser	Ser	Leu	Pro	Ser	Leu
							745						750		
His	Val	Arg	Lys	Gln	Lys	Ala	Leu	Glu	Ala	Glu	Leu	Asp	Ala	Gln	His
		755					760					765			
Leu	Ser	Glu	Thr	Phe	Asp	Asn	Ile	Asp	Asn	Leu	Ser	Pro	Lys	Ala	Ser
						775					780				

FIG. 3H

His Arg Ser Lys Gln Arg His Lys Gln Ser Leu Tyr Gly Asp Tyr Val	785	790	795	800
Phe Asp Thr Asn Arg His Asp Asp Asn Arg Ser Asp Asn Phe Asn Thr	805	810	815	
Gly Asn Met Thr Val Leu Ser Pro Tyr Leu Asn Thr Thr Val Leu Pro	820	825	830	
Ser Ser Ser Ser Arg Gly Ser Leu Asp Ser Ser Arg Ser Glu Lys	835	840	845	
Asp Arg Ser Leu Glu Arg Glu Arg Gly Ile Gly Leu Gly Asn Tyr His	850	855	860	
Pro Ala Thr Glu Asn Pro Gly Thr Ser Ser Ser Lys Arg Gly Leu Gln Ile	865	870	875	880
Ser Thr Thr Ala Ala Gln Ile Ala Lys Val Met Glu Glu Val Ser Ala	885	890	895	

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FIG. 3I

Ile	His	Thr	Ser	Gln	Glu	Asp	Arg	Ser	Ser	Gly	Ser	Thr	Thr	Glu	Leu
			900					905					910		
His	Cys	Val	Thr	Asp	Glu	Arg	Asn	Ala	Leu	Arg	Arg	Ser	Ser	Ala	Ala
		915					920					925			
His	Thr	His	Ser	Asn	Thr	Tyr	Asn	Phe	Thr	Lys	Ser	Glu	Asn	Ser	Asn
		930				935					940				
Arg	Thr	Cys	Ser	Met	Pro	Tyr	Ala	Lys	Leu	Glu	Tyr	Lys	Arg	Ser	Ser
945				950					955					960	
Asn	Asp	Ser	Leu	Asn	Ser	Val	Ser	Ser	Asn	Asp	Gly	Tyr	Gly	Lys	Arg
				965					970					975	
Gly	Gln	Met	Lys	Pro	Ser	Ile	Glu	Ser	Tyr	Ser	Glu	Asp	Asp	Glu	Ser
			980					985				990			
Lys	Phe	Cys	Ser	Tyr	Gly	Gln	Tyr	Pro	Ala	Asp	Leu	Ala	His	Lys	Ile
		995					1000					1005			

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FIG. 3J

His Ser Ala Asn His Met Asp Asp Asn Asp Gly Glu Leu Asp Thr Pro	1010	1015	1020
Ile Asn Tyr Ser Leu Lys Tyr Ser Asp Glu Gln Leu Asn Ser Gly Arg	1025	1030	1035
Gln Ser Pro Ser Gln Asn Glu Arg Trp Ala Arg Pro Lys His Ile Ile	1045	1050	1055
Glu Asp Glu Ile Lys Gln Ser Glu Gln Arg Gln Ser Arg Asn Gln Ser	1060	1065	1070
Thr Thr Tyr Pro Val Tyr Thr Glu Ser Thr Asp Asp Lys His Leu Lys	1075	1080	1085
Phe Gln Pro His Phe Gly Gln Gln Glu Cys Val Ser Pro Tyr Arg Ser	1090	1095	1100
Arg Gly Ala Asn Gly Ser Glu Thr Asn Arg Val Gly Ser Asn His Gly	1105	1110	1115
			1120

FIG. 3K

Ile Asn Gln Asn Val Ser Gln Ser Leu Cys Gln Glu Asp Asp Tyr Glu
 1125 1130
 Asp Asp Lys Pro Thr Asn Tyr Ser Glu Arg Tyr Ser Glu Glu Glu Gln
 1140 1145 1150
 His Glu Glu Glu Arg Pro Thr Asn Tyr Ser Ile Lys Tyr Asn Glu
 1155 1160 1165
 Glu Lys Arg His Val Asp Gln Pro Ile Asp Tyr Ser Leu Lys Tyr Ala
 1170 1175 1180
 Thr Asp Ile Pro Ser Ser Gln Lys Gln Ser Phe Ser Phe Ser Lys Ser
 1185 1190 1195 1200
 Ser Ser Gly Gln Ser Ser Lys Thr Glu His Met Ser Ser Ser Glu
 1205 1210 1215
 Asn Thr Ser Thr Pro Ser Ser Asn Ala Lys Arg Gln Asn Gln Leu His
 1220 1225 1230

FIG. 3L

Pro Ser	Ser Ala	Gln Ser	Arg Ser	Gly Gln	Pro Gln	Lys Ala	Ala Thr
1235			1240			1245	
Cys Lys	Val Ser	Ile Asn	Gln Glu	Thr Ile	Gln Thr	Tyr Cys	Val
1250		1255			1260		
Glu Asp	Thr Pro	Ile Cys	Phe Ser	Arg Cys	Ser Ser	Leu Ser	Leu
1265		1270			1275		1280
Ser Ser	Ala Glu	Asp Glu	Ile Ile	Gly Cys	Asn Gln	Thr Thr	Gln Glu
		1285			1290		Ala
Asp Ser	Ala Asn	Thr Leu	Gln Ile	Ala Glu	Ile Lys	Gly Lys	Ile Gly
		1300			1305		1310
Thr Arg	Ser Ala	Glu Asp	Pro Val	Ser Glu	Val Pro	Ala Val	Ser Gln
		1315			1320		1325
His Pro	Arg Thr	Lys Ser	Ser Arg	Leu Gln	Gly Ser	Ser Leu	Ser Ser
		1330			1340		

FIG. 3M

Glu Ser Ala Arg His Lys Ala Val Glu Phe Pro Ser Gly Ala Lys Ser
1345 1350 1355 1360

Pro Ser Lys Ser Gly Ala Gln Thr Pro Lys Ser Pro Pro Glu His Tyr
1365 1370 1375

Val Gln Glu Thr Pro Leu Met Phe Ser Arg Cys Thr Ser Val Ser Ser
1380 1385 1390

Leu Asp Ser Phe Glu Ser Arg Ser Ile Ala Ser Ser Val Gln Ser Glu
1395 1400 1405

Pro Cys Ser Gly Met Val Ser Gly Ile Ile Ser Pro Ser Asp Leu Pro
1410 1415 1420

Asp Ser Pro Gly Gln Thr Met Pro Pro Ser Arg Ser Lys Thr Pro Pro
1425 1430 1435 1440

Pro Pro Pro Gln Thr Ala Gln Thr Lys Arg Glu Val Pro Lys Asn Lys
1445 1450 1455

FIG. 3N

Ala Pro Thr Ala Glu Lys Arg Glu Ser Gly Pro Lys Gln Ala Ala Val
 1460 1465 1470
 Asn Ala Ala Val Gln Arg Val Gln Val Leu Pro Asp Ala Asp Thr Leu
 1475 1480 1485
 Leu His Phe Ala Thr Glu Ser Thr Pro Asp Gly Phe Ser Cys Ser Ser
 1490 1495 1500
 Ser Leu Ser Ala Leu Ser Leu Asp Glu Pro Phe Ile Gln Lys Asp Val
 1505 1510 1515 1520
 Glu Leu Arg Ile Met Pro Pro Val Gln Glu Asn Asp Asn Gly Asn Glu
 1525 1530 1535
 Thr Glu Ser Glu Gln Pro Lys Glu Ser Asn Glu Asn Gln Glu Lys Glu
 1540 1545 1550
 Ala Glu Lys Thr Ile Asp Ser Glu Lys Asp Leu Leu Asp Asp Ser Asp
 1555 1560 1565

FIG. 30

Asp Asp Asp Ile Glu Ile Leu Glu Glu Cys Ile Ile Ser Ala Met Pro 1570 1575 1580	
Thr Lys Ser Ser Arg Lys Gly Lys Lys Pro Ala Gln Thr Ala Ser Lys 1585 1590 1595 1600	
Leu Pro Pro Pro Val Ala Arg Lys Pro Ser Gln Leu Pro Val Tyr Lys 1605 1610 1615	
Leu Leu Pro Ser Gln Asn Arg Leu Gln Pro Gln Lys His Val Ser Phe 1620 1625 1630	
Thr Pro Gly Asp Asp Met Pro Arg Val Tyr Cys Val Glu Gly Thr Pro 1635 1640 1645	
Ile Asn Phe Ser Thr Ala Thr Ser Ser Leu Ser Asp Leu Thr Ile Glu Ser 1650 1655 1660	
Pro Pro Asn Glu Leu Ala Ala Gly Glu Gly Val Arg Gly Gly Ala Gln 1665 1670 1675 1680	

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FIG. 3P

Ser	Gly	Glu	Phe	Glu	Lys	Arg	Asp	Thr	Ile	Pro	Thr	Glu	Gly	Arg	Ser
				1685					1690					1695	
Thr	Asp	Glu	Ala	Gln	Gly	Gly	Lys	Thr	Ser	Ser	Val	Thr	Ile	Pro	Glu
				1700				1705					1710		
Leu	Asp	Asp	Asn	Lys	Ala	Glu	Glu	Gly	Asp	Ile	Leu	Ala	Glu	Cys	Ile
		1715					1720					1725			
Asn	Ser	Ala	Met	Pro	Lys	Gly	Lys	Ser	His	Lys	Pro	Phe	Arg	Val	Lys
						1735					1740				
Lys	Ile	Met	Asp	Gln	Val	Gln	Gln	Ala	Ser	Ala	Ser	Ser	Ser	Ala	Pro
					1750				1755					1760	
Asn	Lys	Asn	Gln	Leu	Asp	Gly	Lys	Lys	Lys	Lys	Pro	Thr	Ser	Pro	Val
					1765				1770					1775	
Lys	Pro	Ile	Pro	Gln	Asn	Thr	Glu	Tyr	Arg	Thr	Arg	Val	Arg	Lys	Asn
					1780			1785					1790		

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FIG. 3Q

Ala Asp	Ser Lys Asn Asn Leu Asn Ala Glu Arg Val Phe Ser Asp Asn	1795	1800	1805
Lys Asp Ser Lys Lys Gln Asn Leu Lys Asn Asn Ser Lys Asp Phe Asn		1810	1815	1820
Asp Lys Leu Pro Asn Asn Glu Asp Arg Val Arg Gly Ser Phe Ala Phe		1825	1830	1835
Asp Ser Pro His His Tyr Thr Pro Ile Glu Gly Thr Pro Tyr Cys Phe		1845	1850	1855
Ser Arg Asn Asp Ser Leu Ser Ser Leu Asp Phe Asp Asp Asp Val		1860	1865	1870
Asp Leu Ser Arg Glu Lys Ala Glu Leu Arg Lys Ala Lys Glu Asn Lys		1875	1880	1885
Glu Ser Glu Ala Lys Val Thr Ser His Thr Glu Leu Thr Ser Asn Gln		1890	1895	1900

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FIG. 3R

Gln Ser Ala Asn Lys Thr Gln Ala Ile Ala Lys Gln Pro Ile Asn Arg	1905	1910	1915	1920
Gly Gln Pro Lys Pro Ile Leu Gln Lys Gln Ser Thr Phe Pro Gln Ser	1925	1930	1935	
Ser Lys Asp Ile Pro Asp Arg Gly Ala Ala Thr Asp Glu Lys Leu Gln	1940	1945	1950	
Asn Phe Ala Ile Glu Asn Thr Pro Val Cys Phe Ser His Asn Ser Ser	1955	1960	1965	
Leu Ser Ser Leu Ser Asp Ile Asp Gln Glu Asn Asn Asn Lys Glu Asn	1970	1975	1980	
Glu Pro Ile Lys Glu Thr Glu Pro Pro Asp Ser Ser Gln Gly Glu Pro Ser	1985	1990	1995	2000
Lys Pro Gln Ala Ser Gly Tyr Ala Pro Lys Ser Phe His Val Glu Asp	2005	2010	2015	

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FIG. 3S

Thr Pro Val Cys Phe Ser Arg Asn Ser Ser Leu Ser Ser Leu Ser Ile
2020 2030

Asp Ser Glu Asp Asp Leu Leu Gln Glu Cys Ile Ser Ser Ala Met Pro
2035 2040 2045

Lys Lys Lys Lys Pro Ser Arg Leu Lys Lys Gly Asp Asn Glu Lys His Ser
2050 2055 2060

Pro Arg Asn Met Gly Gly Ile Leu Gly Glu Asp Leu Thr Leu Asp Leu
2065 2070 2075 2080

Lys Asp Ile Gln Arg Pro Asp Ser Glu His Gly Leu Ser Pro Asp Ser
2085 2090 2095

Glu Asn Phe Asp Trp Lys Ala Ile Gln Glu Gly Ala Asn Ser Ile Val
2100 2105 2110

Ser Ser Leu His Gln Ala Ala Ala Ala Cys Leu Ser Arg Gln Ala
2115 2120 2125

FIG. 3T

Ser Ser Asp Ser Asp Ser Ile Leu Ser Leu Lys Ser Gly Ile Ser Leu
 2130 2135 2140
 Gly Ser Pro Phe His Leu Thr Pro Asp Gln Glu Lys Pro Phe Thr
 2145 2150 2155 2160
 Ser Asn Lys Gly Pro Arg Ile Leu Lys Pro Gly Glu Lys Ser Thr Leu
 2165 2170 2175
 Glu Thr Lys Lys Ile Glu Ser Glu Ser Lys Gly Ile Lys Gly Gly Lys
 2180 2185 2190
 Lys Val Tyr Lys Ser Leu Ile Thr Gly Lys Val Arg Ser Asn Ser Glu
 2195 2200 2205
 Ile Ser Gly Gln Met Lys Gln Pro Leu Gln Ala Asn Met Pro Ser Ile
 2210 2215 2220
 Ser Arg Gly Arg Thr Met Ile His Ile Pro Gly Val Arg Asn Ser Ser
 2225 2230 2235 2240

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FIG. 3U

Ser	Ser	Thr	Ser	Pro	Val	Ser	Lys	Lys	Gly	Pro	Pro	Leu	Lys	Thr	Pro
				2245					2250					2255	
Ala	Ser	Lys	Ser	Pro	Ser	Glu	Gly	Gln	Thr	Ala	Thr	Thr	Ser	Pro	Arg
				2260				2265					2270		
Gly	Ala	Lys	Pro	Ser	Val	Lys	Ser	Glu	Leu	Ser	Pro	Val	Ala	Arg	Gln
				2275				2280				2285			
Thr	Ser	Gln	Ile	Gly	Gly	Ser	Ser	Lys	Ala	Pro	Ser	Arg	Ser	Gly	Ser
				2290			2295				2300				
Arg	Asp	Ser	Thr	Pro	Ser	Arg	Pro	Ala	Gln	Gln	Pro	Leu	Ser	Arg	Pro
				2305			2310		2315						2320
Ile	Gln	Ser	Pro	Gly	Arg	Asn	Ser	Ile	Ser	Pro	Gly	Arg	Asn	Gly	Ile
				2325				2330						2335	
Ser	Pro	Pro	Asn	Lys	Leu	Ser	Gln	Leu	Pro	Arg	Thr	Ser	Ser	Pro	Ser
				2340				2345						2350	

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FIG. 3V

Thr Ala Ser Thr Lys Ser Ser Gly Ser Gly Lys Met Ser Tyr Thr Ser
2355 2360 2365

Pro Gly Arg Gln Met Ser Gln Gln Asn Leu Thr Lys Gln Thr Gly Leu
2370 2375 2380

Ser Lys Asn Ala Ser Ser Ile Pro Arg Ser Glu Ser Ala Ser Lys Gly
2385 2390 2395 2400

Leu Asn Gln Met Asn Asn Gly Asn Gly Ala Asn Lys Lys Val Glu Leu
2405 2410 2415

Ser Arg Met Ser Ser Thr Lys Ser Ser Gly Ser Glu Ser Asp Arg Ser
2420 2425 2430

Glu Arg Pro Val Leu Val Arg Gln Ser Thr Phe Ile Lys Glu Ala Pro
2435 2440 2445

Ser Pro Thr Leu Arg Arg Lys Leu Glu Glu Ser Ala Ser Phe Glu Ser
2450 2455 2460

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FIG. 3W

Leu Ser Pro Ser Ser Arg Pro Ala Ser Pro Thr Arg Ser Gln Ala Gln	2465	2470	2475	2480
Thr Pro Val Leu Ser Pro Ser Pro Asp Met Ser Leu Ser Thr His	2485	2490		2495
Ser Ser Val Gln Ala Gly Gly Trp Arg Lys Leu Pro Pro Asn Leu Ser	2500	2505		2510
Pro Thr Ile Glu Tyr Asn Asp Gly Arg Pro Ala Lys Arg His Asp Ile	2515	2520	2525	
Ala Arg Ser His Ser Glu Ser Pro Ser Arg Leu Pro Ile Asn Arg Ser	2530	2535	2540	
Gly Thr Trp Lys Arg Glu His Ser Lys His Ser Ser Ser Leu Pro Arg	2545	2550	2555	2560
Val Ser Thr Trp Arg Arg Thr Gly Ser Ser Ser Ser Ile Leu Ser Ala	2565	2570		2575

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FIG. 3X

Ser Ser Glu Ser Ser Glu Lys Lys Ala Lys Ser Glu Asp Glu Lys His Val	2580	2585	2590
Asn Ser Ile Ser Gly Thr Lys Gln Ser Lys Glu Asn Gln Val Ser Ala	2595	2600	2605
Lys Gly Thr Trp Arg Lys Ile Lys Glu Asn Glu Phe Ser Pro Thr Asn	2610	2615	2620
Ser Thr Ser Gln Thr Val Ser Ser Gly Ala Thr Asn Gly Ala Glu Ser	2625	2630	2635
Lys Thr Leu Ile Tyr Gln Met Ala Pro Ala Val Ser Lys Thr Glu Asp	2640	2645	2650
Val Trp Val Arg Ile Glu Asp Cys Pro Ile Asn Asn Pro Arg Ser Gly	2655	2660	2665
Arg Ser Pro Thr Gly Asn Thr Pro Pro Val Ile Asp Ser Val Ser Glu	2670	2675	2680
	2685		

FIG. 3Y

Lys Ala Asn Pro Asn Ile Lys Asp Ser Lys Asp Asn Gln Ala Lys Gln
2690 2695 2700

Asn Val Gly Asn Gly Ser Val Pro Met Arg Thr Val Gly Leu Glu Asn
2705 2710 2715 2720

Arg Leu Thr Ser Phe Ile Gln Val Asp Ala Pro Asp Gln Lys Gly Thr
2725 2730 2735

Glu Ile Lys Pro Gly Gln Asn Asn Pro Val Ser Glu Thr Asn
2740 2745 2750

Glu Ser Pro Ile Val Glu Arg Thr Pro Phe Ser Ser Ser Ser
2755 2760 2765

Lys His Ser Ser Pro Ser Gly Thr Val Ala Ala Arg Val Thr Pro Phe
2770 2775 2780

Asn Tyr Asn Pro Ser Pro Arg Lys Ser Ser Ala Asp Ser Thr Ser Ala
2785 2790 2795 2800

[illegible]

FIG. 3Z

[illegible]

FIG. 4A

APC	203	LGTCODMEKRAORRIARIOQIEKDILRQL	233
		I :: II IIIII:I I	I
RAL2	576	LTGAKGLQLRALRRRIARIEGGTAISPTSPL	606

FIG. 4B

APC	453	MKLSFDEEHRHAMNELGGLOAIAELLQVD	481
		I : II:IIII: :	:
M3 HACHR	249	LYWRIYKETEKRTKELAGLOASGTEAETE	277
		II : I : IIIII	
MCC	220	LYPNLAEERSRWEKELAGLREENESLTAM	248
		I : II: : II:II I I	
APC	453	MKLSFDEEHRHAMNELGGLOAIAELLQVD	481

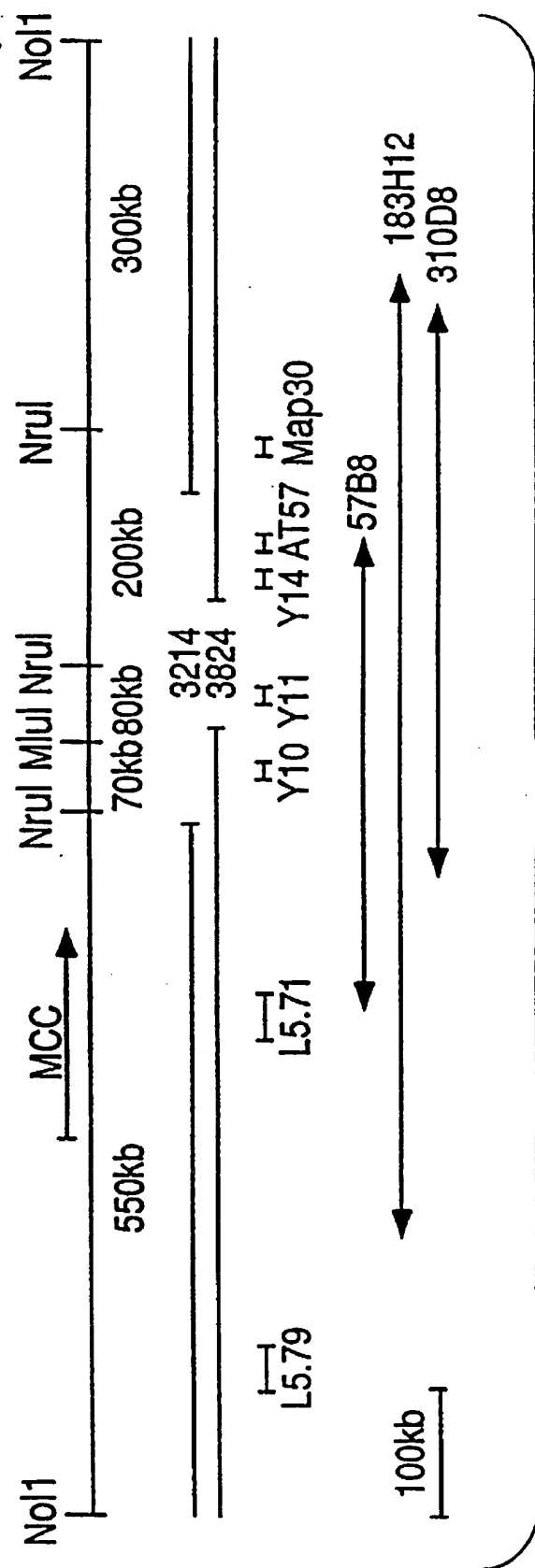


FIG. 5

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FIG. 6A

GCA	GTC	GCC	GCT	CCA	GTC	TAT	CCG	GCA	CTA	GGA	ACA	GCC	CCG	GGN	GGC	GAG	ACG	55
Ala	Val	Ala	Ala	Ala	Pro	Val	Tyr	Pro	Ala	Leu	Gly	Thr	Ala	Pro	Gly	Glu	Thr	109
GTC	CCC	GCC	ATG	TCT	GCG	GCC	ATG	AGG	GAG	AGG	TTC	GAC	CGG	TTC	CTG	CAC	GAG	
Val	Pro	Ala	MET	Ser	Ala	Ala	MET	Arg	Glu	Arg	Phe	Asp	Arg	Phe	Leu	His	Glu	163
AAG	AAC	TGC	ATG	ACT	GAC	CTT	CTG	GCC	AAG	CTC	GAG	GCC	AAA	ACC	GGC	GTG	AAC	
Lys	Asn	Cys	MET	Thr	Asp	Leu	Leu	Ala	Lys	Leu	Glu	Ala	Lys	Thr	Gly	Val	Asn	217
AGG	AGC	TTC	ATC	GCT	CTT	GGT	GTC	ATC	GGA	CTG	GTG	GCC	TTG	TAC	CTG	GTG	TTC	
Arg	Ser	Phe	Ile	Ala	Leu	Gly	Val	Ile	Gly	Leu	Val	Ala	Leu	Tyr	Leu	Val	Phe	271
GGT	TAT	GGA	GCC	TCT	CTC	CTC	TGC	AAC	CTG	ATA	GGA	TTT	GGC	TAC	CCA	GCC	TAC	
Gly	Tyr	Gly	Ala	Ser	Leu	Leu	Cys	Asn	Leu	Ile	Gly	Phe	Gly	Tyr	Pro	Ala	Tyr	325
ATC	TCA	ATT	AAA	GCT	ATA	GAG	AGT	CCC	AAC	AAA	GAA	GAT	ACC	GAT	ACC	TGG	CTG	
Ile	Ser	Ile	Lys	Ala	Ile	Glu	Ser	Pro	Asn	Lys	Glu	Asp	Thr	Gln	Trp	Leu	Leu	379
ACC	TAC	TGG	GTA	GTG	TAT	GGT	GTG	TTC	AGC	ATT	GCT	GAA	TTC	TTC	TCT	GAT	ATC	
Thr	Tyr	Trp	Val	Val	Tyr	Gly	Val	Phe	Ser	Ile	Ala	Glu	Phe	Phe	Ser	Asp	Ile	433
TTC	CTG	TCA	TGG	TTC	CCC	TTC	TAC	TAC	ATG	CTG	AAG	TGT	GGC	TTC	CTG	TTG	TGG	
Phe	Leu	Ser	Trp	Phe	Pro	Phe	Tyr	Tyr	MET	Leu	Lys	Cys	Gly	Phe	Leu	Leu	Trp	487
TGC	ATG	GCC	CCG	AGC	CCT	TCT	AAT	GGG	GCT	GAA	CTG	CTC	TAC	AAG	CGC	ATC	ATC	
Cys	MET	Ala	Pro	Ser	Pro	Ser	Asn	Gly	Ala	Glu	Leu	Leu	Tyr	Lys	Arg	Ile	Ile	541
CGT	CCT	TTC	TTC	CTG	AAG	CAC	GAG	TCC	CAG	ATG	GAC	AGT	GTG	GTC	AAG	GAC	CTT	
Arg	Pro	Phe	Phe	Leu	Lys	His	Glu	Ser	Gln	MET	Asp	Ser	Val	Val	Lys	Asp	Leu	

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FIG. 6B

AAA GAC AAG TCC AAA GAG ACT GCA GAT GCC ATC ACT AAA GAA GCG AAG AAA GCT	568	595
Lys Asp Lys Ser Lys Glu Thr Ala Asp Ala Ile Thr Lys Glu Ala Lys Lys Ala	622	
ACC GTG AAT TTA CTG GGT GAA GAA AAG AAG AGC ACC TAA ACC AGA	640	690
Thr Val Asn Leu Leu Gly Glu Glu Lys Lys Ser Thr	660	700
CTAAACCAGA CTGGATGGAA ACTTCCTGCC CTCTCTGTAC CTTCCCTACTG GAGCTTGATG TTATATTAGG	670	770
GACTGTGGTA TAATTATTTT AATAATGTTG CCTTGGAAC ATTTTGTGAGA TATTAAAGAT TGGAAATGTGT	730	
780 790 800 810 820 830 840		
TGTAAGTTTC TTTGCTTACT TTTTACTGTCT ATATATATAG GGAGCACCTTT AAACCTTAATG CAGTGGGCAG	850 860 870 880 890 900 910	
TGTCCACGTT TTTGGAAAAT GTATTTTGCC TCTGGGTAGG AAAAGATGTA TGTTGCTATC CTGCAGGAAA	920 930 940 950 960 970 980	
TATAAACTTA AAATAAAAT ATATACCCCA CAGGCTGTGT ACTTTACTGG GCTCTCCCTG CACGSATTTT	990 1000 1010 1020 1030 1040 1050	
CTCTGTAGTT ACATTTAGGR TAATCTTTAT GGTTCTACTT CCTRTAATGT ACAATTTTAT ATAAATTCNGR	1060 1070 1080 1090 1100 1110 1120	
AATGTTTTTA ATGTATTTGT GCACATGTAC ATATGGAAAT GTTACTGTCT GACTACANCA TGCATCATGC	1130 1140 1150 1160 1170 1180 1190	
TCATGGGGAG GGAGCAGGGG AAGGTTGTAT GTGTCAATTA TAACTTCTGT ACAGTAAGAC CACCTGCCAA	1200 1210 1220 1230 1240 1250 1260	
AAGCTGGAGG AACCATTTGT CTGGTGTGGT CTACTAAATA ATACTTTAGG AAATACGTGA TTAATATGCA	1270 1280 1290 1300 1310 1320 1330	
AGTGAACAAA GTGAGAAATG AAATCGAATG GAGATTGGCC TGTTGTTTC CGTAGTATAT GGCATATGAA	1340 1350 1360 1370 1380 1390 1400	

SEQUENCE LISTING

FIG. 6C

TACCAGGATA	GCTTTATAAA	GCAGTTAGTT	AGTTAGTTAC	TCACCTCTAGT	GATAAATCGG	GAAATTTACA
1410	1420	1430	1440	1450	1460	1470
CACACACACA	CACACACACA	CACACACACA	CACACACACA	CACACACACA	GAGTACCCCTG	TAACTCTCAA
1480	1490	1500	1510	1520	1530	1540
TTCCCTGAAA	AACTAGTAAT	ACTGTCCTTAT	CTGCTATAAA	CTTTACATAT	TTGTCTATTG	TCAAGATGCT
1550	1560	1570	1580	1590	1600	1610
ACANTGGAMN	CCATTCTGG	TTTTATCTTC	ANAGSGGAGA	NACATGTTGA	TTTAGTCTTC	TTTCCCAATC
1620	1630	1640	1650	1660	1670	1680
TTCTTTTITA	AMCCAGTTTN	AGGMNCTTCT	GRAGATTGY	CCACCTCTGA	TTACATGTAT	GTTCTYGTIT
1690	1700	1710	1720	1730	1740	1750
GTATCATKAG	CAACAACATG	CTAATGRCGA	CACCTAGCTC	TRAGMGAAT	TCTGGGAGAN	TGARAGGNWG
1760	1770	1780	1790	1800	1810	1820
TATARAGTMN	CCCATAATCT	GCTTGGCAAT	AGTTAAGTCA	ATCTATCTTC	AGTTTTTCTC	TGGCCTTTAA
1830	1840	1850	1860	1870	1880	1890
GGTCAAAACAC	AAGAGGCTTC	CCTAGTTTAC	AAGTCAGAGT	CACCTGTAGT	CCATTTAAAT	GCCCTCATCC
1900	1910	1920	1930	1940	1950	1960
GTATTCTTTG	TGTTGATAAG	CTGCACAKGA	CTACATAGTA	AGTACAGANC	AGTAAAGTGA	ANNCGGATGT
1970	1980	1990	2000	2010	2020	2030
CTCCATTGAT	CTGCCAANTC	GNTATAGAGA	GCAATTGTGTC	TGGACTAGAA	AATCTGAGTT	TTACACCCATA
2040	2050	2060	2070	2080	2090	2100
CTGTTAAGAG	TCCTTTTGAA	TTAAACTAGA	CTAAAACAAG	TGTATAACTA	AACATAACAAG	ATTAAATATC
2110	2120	2130	2140	2150	2160	2170
CAGCCAGTAC	AGTATTTTTT	AAGGCCAAATA	AAGATGATTA	GCTCACCTTG	AGNTAACAAT	CAGGTAAGAT
2180	2190	2200	2210	2220	2230	2240
CATNACAATG	TCTCATGATG	TNAANAATAT	TAAAGATATC	AATACTAAGT	GACAGTATCA	CNNCTAATAT

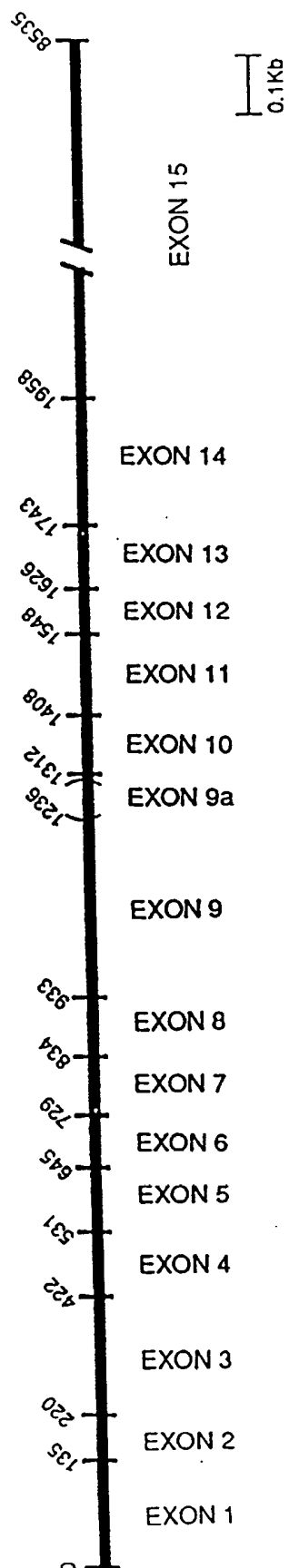
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FIG. 6D

2250 AATATGGATC 2260 AGAGCATTTA 2270 TTTTGGGGAG 2280 GAAACACAGTG 2290 GTGATTACCG 2300 GCATTTTATT 2310 AAACCTTAAA
2320 CTTTGTAGAA 2330 AGCAAAACAA 2340 ATTGTTCTTG 2350 GGAGAAAATC 2360 AACCTTTAGA 2370 TTAAAAAAAT 2380 TTTAAGTAWC
2390 TAGGAGTATT 2400 TAAATCCTTT 2410 TCCCATAAAT 2420 AAAAGTACAG 2430 TTTTCTTGGT 2440 GGCAGAAATGA 2450 AAATCAGCAA
2460 CNTCTAGCAT 2470 ATAGACTATA 2480 TAAATCAGATT 2490 GACAGCATAT 2500 AGAATATATT 2510 ATCAGACAAG 2520 ATGAGGAGGT
2530 ACAAAAAGTTA 2540 CTATTGCTCA 2550 TAATGACTTA 2560 CAGGCTAAAA 2570 NTAGNTNTAA 2580 AATACTATAT 2590 TAAATTCTGA
2600 ATGCAATTTT 2610 TTTTGTGTTCC 2620 CTTGAGACCA 2630 AAATTTAAGT 2640 TAACTGTTGC 2650 TGGCAGTCTA 2660 AGTGTAATG
2670 TTAACAGCAG 2680 GAGAAGTTAA 2690 GAATTGAGCA 2700 GTTCTGTTGC 2710 ATGATTTCCT 2720 AAATGAAATA 2730 CTGCCCTTGGC
2740 TAGAGTTTGA 2750 AAAACTAATT 2760 GAGCCTGTGC 2770 CTGGCTAGAA 2780 AACAAAGCGTT 2790 TATTGAAATG 2800 TGAATAGTGT
2810 TTCAAAGGTA 2820 TGTAGTTACA 2830 GAATTCCTAC 2840 CAAACAGCTT 2850 AAATTCTTCA 2860 AGAAAGAATT 2870 CCTGCAGCAG
2880 TTATATCCCTT 2890 ACCTGAAGGC 2900 TTCAATCAAT 2910 TGGATCAACA 2920 ACTGCTACTC 2930 TCGGGAAGAC 2940 TCCTCTACTC
2950 ACAGCTGAAG 2960 AAAATGAGCA 2970 CACCCCTTCAC 2980 ACTGTTATCA 2990 CCTATCCTGA 3000 AGATGTGATA 3010 CACTGAATGG
3020 AAATAAATAG 3030 ATGTAAATAA 3040 AATTGAGWTC 3050 TCATTTAAAA 3060 AAAACCATGT 3070 GCCCAATGGG 3080 AAAATGACCT
3090 CATGTTGTGG 3100 TTTAAACAGC 3110 AACTGCACCC 3120 ACTAGCACAG 3130 CCCATTGAGC 3140 TANCCATAT 3150 ATACATCTCT
3160 GTCAGTGCCC CTC

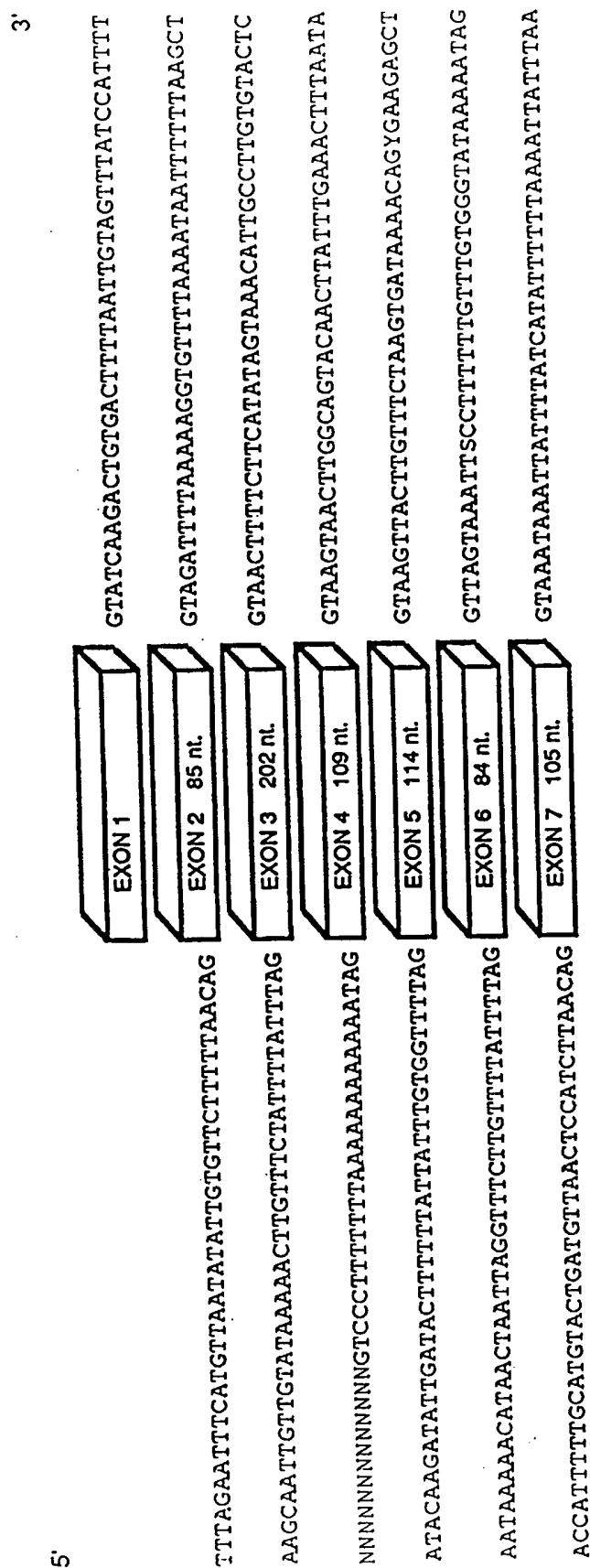
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FIG. 7A



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FIG. 7B-1



Sequence "Geth-5"

FIG. 7B-2

